

**ABSTRACT OF THE DISCLOSURE**

A test structure includes a plurality of lines and a plurality of contact openings defined in the lines. A method for determining contact opening dimensions includes providing a wafer having a test structure comprising a plurality of lines and a plurality of contact openings defined in the lines; illuminating at least a portion of the contact openings with a light source; measuring light reflected from the illuminated portion of the contact openings to generate a reflection profile; and determining a dimension of the contact openings based on the reflection profile. A metrology tool adapted to receive a wafer having a test structure comprising a plurality of lines and a plurality of contact openings defined in the lines includes a light source, a detector, and a data processing unit. The light source is adapted to illuminate at least a portion of the contact openings. The detector is adapted to measure light reflected from the illuminated portion of the contact openings to generate a reflection profile. The data processing unit is adapted to determine a dimension of the contact openings based on the reflection profile.